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Cisco Expo 2009

Cisco IP Video Surveillance Design and Integration

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Welcome to the Human Network.

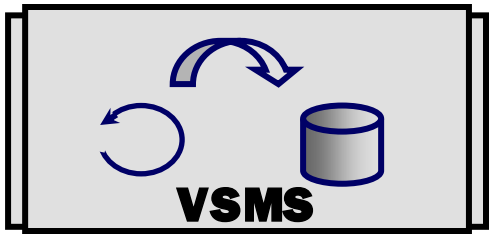
Agenda

- Deployment Models
- Camera Types
- Digital Video and VS Operations
- VS Storage Example

Deployment Models

Video Surveillance Manager (VSM)

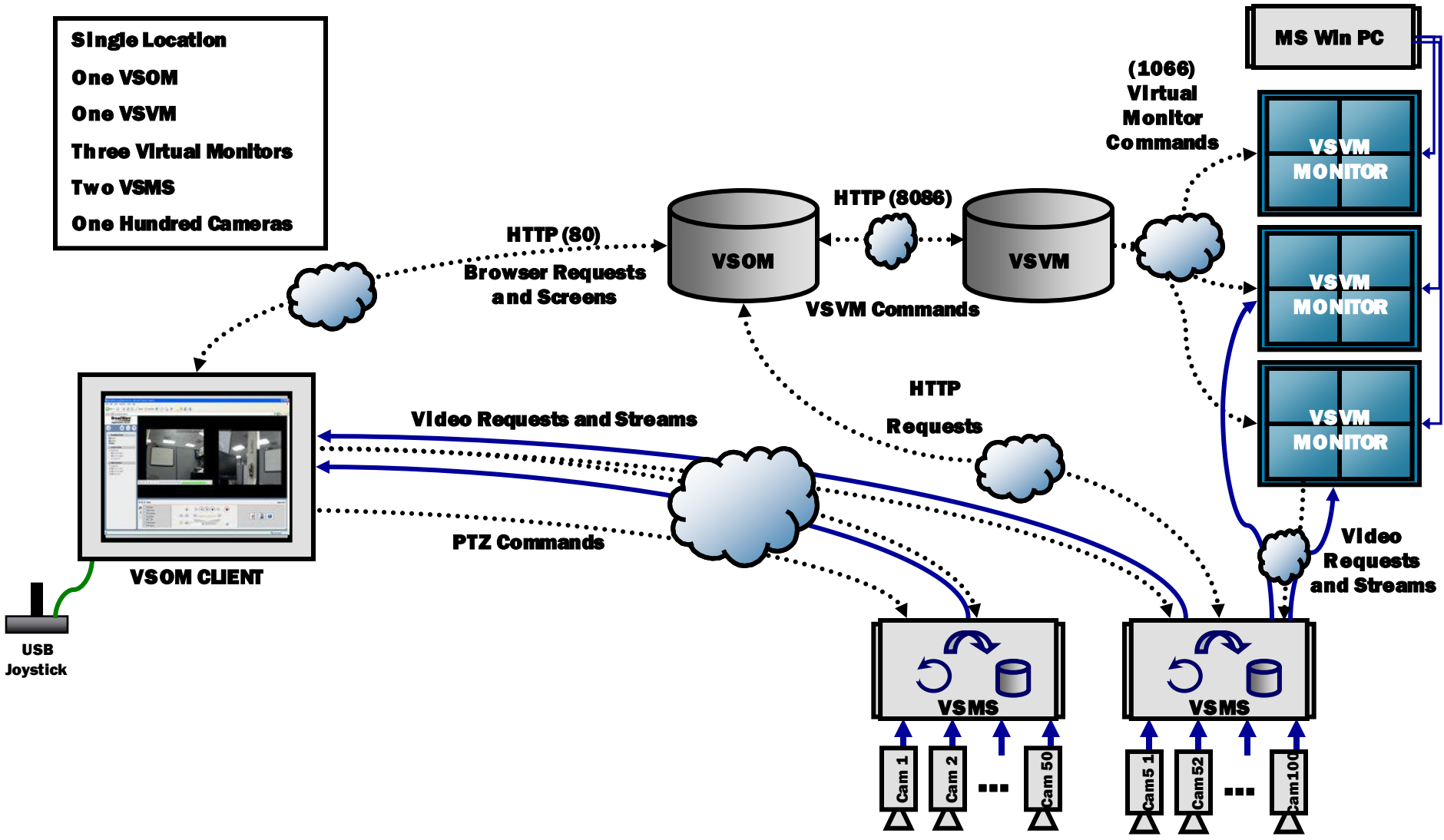
Video Surveillance Media Server



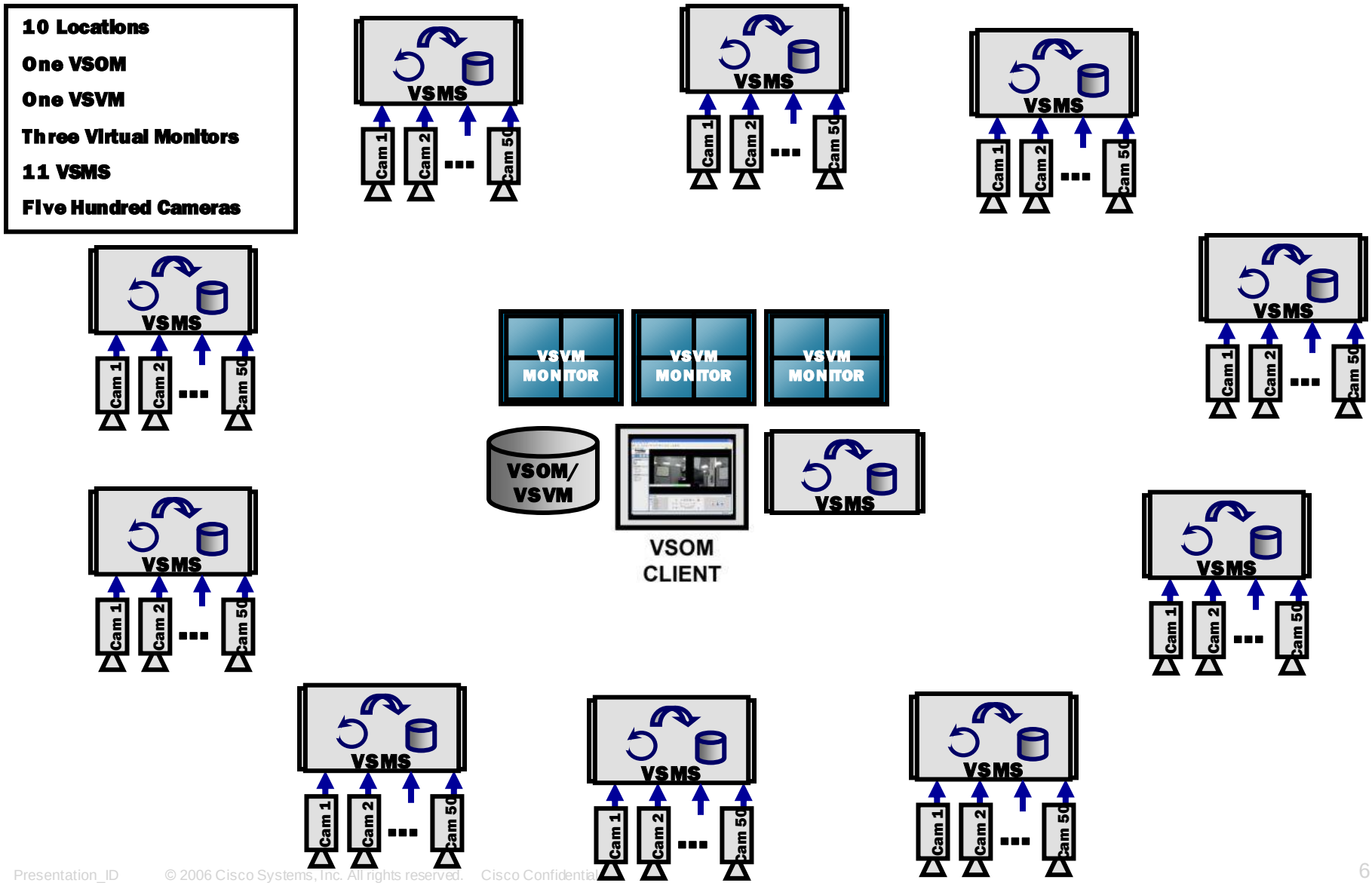
Video Surveillance Operations Manager

Video Surveillance Virtual Matrix

Single Site System Example Diagram



Multi-Site With Central Command & Control



Camera Types

General Camera Types

- Fixed vs. PTZ
- Dome
- Indoor vs. Outdoor (Indoor + Enclosure)

Cameras by Movement and Optical Zoom

- Fixed Cameras

- PTZ Cameras

(Pan Tilt Zoom)

Dome Cameras

- Dome Fixed

- Dome PTZ

Outdoor Enclosures for our Cameras

- Aigis

- Videoalarm

Digital Video and VS Operations

Common Digital Video Attributes

- Compression: MPEG-4, MPEG-2, H.264, MJPEG
  - Good Average: MPEG-4
- Frame Rate: 3.75 - 30 fps (frames per second)
  - Good Average: 15 fps
- Resolution: CIF, 2CIF, 4CIF, D1, HD720, HD1080
  - Good Average: D1/4CIF

Video Resolution

Dimensions	Resolution
VGA	640 x 480
SVGA	800 x 600
XGA	1024 x 768
QCIF	176 x 144
CIF	352 x 288
2 CIF	704 x 288
4 CIF	704 x 576
D1	720 x 576
HD 720	1280x720
HD 1080	1920x1080

Resolution Comparison

CIF [VCD] Resolution (352x240) vs. 1080 (1920x1080)

Resolution Comparison

4CIF/D1 [SDTV] Resolution (720x480) vs.1080 (1920x1080)

Resolution Comparison

1080 (1920x1080)

HD Cisco Video Surveillance IP Cameras 4000 Series

- 1080p (1920 x 1080) 30 FPS
- 720p (1280 x 720) 60 FPS
- H.264, MJPEG Compression
- USB Memory Card
- IPv6 Capable
- Dedicated Digital Signal Processor (DSP) for Video Analytics
- 4 Models:
  - CIVS-IPC-4500 (DSP)
  - CIVS-IPC-4500W (DSP)
  - CIVS-IPC-4300W
  - CIVS-IPC-4300

Design Input

- Number of Cameras, and camera types: Fixed, PTZ, dome, etc.
- Resolution: HD, 4CIF, CIF, etc.
- Frames Per Second: 30, 25, 20, 15, etc.
- Days of Storage/Archive
- Number of Sites. Repeat above per site.
- Video Wall needed?

VS Storage Example

Example Storage Calculations

Initial System Requirements:

Compression: MPEG4
Resolution: 4CIF
Frame Rate: 15fps
Archive Period: 30 Days
No. of Cameras: 500

Results:

- Data Rate: MPEG4, 4CIF, 15fps = **1.5 Mbps**
- Daily storage/Camera: 1.5 x 3600x24/8 = **16 GB/day**
- Daily Storage for 500 Cameras: 500x16 = **8 TB/day**
- 30 Day Storage for 500 Cameras: 30x8 = **240 TB**

For More info:

- **The Web** cisco.com/go/physicalsecurity
- **Email Me** dosary@cisco.com